IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant: PECEN ET AL.   )
)   Examiner Z. Lu
Appl. No.   10/824,550   )
)   Art Unit 2618
Confirm. No.   6417   )
)   Atty. Docket No. CS24618RA
Filed: 14 April 2004   )

Title: "System Selection in Wireless Communication Networks"

APPEAL BRIEF UNDER 37 C.F.R. 41.37(c)

Assistant Commissioner for Patents
Alexandria, Virginia 22313

Sir:

Real Party In Interest

The real party in interest is Motorola Inc., by virtue of an assignment duly executed by the named inventor(s) and recorded in the Patent Office.

Related Appeals & Interferences

There are no related appeals or interferences.

Status of Claims

Claims 1-23 are pending and are the subject of the instant appeal.

Status of Amendments

The claims have not been amended subsequent to the mailing of the final Office Action on 26 February 2007.

Summary of Claimed Subject Matter

Claim 1 is drawn to a method in a wireless communications device comprising obtaining a measure of mobility of the wireless communications device (paragraphs 0017-20, 22, 25 & 28 and FIGS. 2, 3 & 6) and monitoring a first system while selected to a second system only if the measure of mobility exceeds a mobility threshold (paragraphs 0016, 17 & 20 and FIG. 6).

Claim 10 is drawn to a method in a hybrid wireless communications device comprising comparing a mobility measurement of the wireless communications device to a mobility threshold while connected to a broadband wireless network (paragraphs 20-23, 27 and FIG. 6), monitoring a cellular communications network if the mobility measurement is greater than a mobility threshold (paragraphs 0017-20, 22, 25 & 28 and FIGS. 2, 3 & 6), and not monitoring the cellular communications network if the mobility measurement is not greater than the mobility threshold (paragraphs 0016, 17 & 20 and FIG. 6).

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Claim 16 is drawn to a method in a wireless communications device capable of communicating in a cellular communications network and in a broadband wireless network, comprising determining regression line error information based on broadband wireless network signal measurements (paragraphs 0018-20, 22, and FIG. 3), monitoring a cellular communications network if the error information is greater than a threshold (paragraphs 0017-20, 22, 25 & 28 and FIGS. 2, 3 & 6), and not monitoring the cellular communications network if the error information is not greater than the threshold (paragraphs 0016, 17 & 20 and FIG. 6).

Claim 20 is drawn to method in a wireless communications device operable on first and second wireless communication systems, comprising operating on the first wireless communications system (paragraphs 0014-16 and FIGS. 1, 2 & 6), making signal measurements on the second wireless communications system (paragraphs 0016 and FIG. 2), and selecting the second wireless communications system if signal measurements on the second wireless communications system exceeds a dynamic threshold for a specified time period (paragraphs 0016-23 and FIG. 2), wherein the dynamic threshold compensates for changes in regression error of the signal measurements on the second wireless communications system (paragraphs 0021-22 and FIG. 6).

Claim 22 is drawn to method in a method in a wireless communications device comprising obtaining a measure of mobility of the wireless communications while selected to a cellular wireless communication system (paragraphs 0017-20, 22, 25 & 28 and FIGS. 2, 3 & 6), and monitoring for a broadband wireless communication system while selected to the cellular wireless communications system only if the measure of mobility exceeds a mobility threshold (paragraphs 0016, 17 & 20 and FIG. 6).

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Grounds of Rejection for Review on Appeal

Whether Claims 1, 3-5, 7-8 and 22-23 are anticipated by US Publication 2002/0147008 (Kallio) under 35 USC 102(b).

Whether Claims 6, 10, 13-14 and 23 are unpatentable over Kallio under 35 USC 103(a).

Whether Claims 2, 9, 11, 15 and 20-21 are patentable over Kallio in view of US Patent No. 7,092,710 (Stoter) under 35 USC 103(a).

Whether Claims 16 and 18-19 are patentable over Kallio in view of US Publication No. 2003/0114162 (Chheda) under 35 USC 103(a).

Arguments re: Kallio

Rejection Summary

Claims 1, 3-5, 7-8 and 22-23 stand rejected under 35 USC 102(b) for anticipation by Kallio.

Claims 6, 10, 13-14 and 23 stand rejected under 35 USC 103(a) as being unpatentable over Kallio.

Discussion of Claim 1

Regarding Claim 1, Kallio fails to disclose a

> ... method in a wireless communications device, the method comprising:
> obtaining a measure of mobility of the wireless communications device;

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monitoring a first system while selected to a second system only if the measure of mobility exceeds a mobility threshold.

The Examiner's assertion that the transmission level or link quality discussed in Kallio corresponds to the claimed "...measure of mobility of the wireless communications device ..." is misplaced. Kallio neither discusses device mobility nor relates mobility to transmission level or link quality. The passages of Kallio referenced by the Examiner do not support the assertion. At paragraph [0040], Kallio discloses a mobile station that attempts a GSM location update when WLAN transmission level indicates that a GSM cell should be selected. At paragraph [0041], Kallio discloses a mobile station that obtains GSM neighbor measurements upon receiving neighbor cell information from the wireless mobile center (WCM). At paragraph [0048], Kallio discusses resuming measurement of GSM neighbor cells when the WLAN transmission level (rx-level) drops between upper and lower thresholds. In paragraphs [0038-39], Kallio discloses a mobile station in idle mode that measures GSM neighbors while camped on a WLAN.

Thus, contrary to the Examiner's assertion, Kallio does not disclose a method in a wireless communications device including "...obtaining a measure of mobility of a wireless communication device..." or "... monitoring a first system while selected to a second system only if the measure of mobility exceeds a mobility threshold". Claim 1 is thus patentably distinguished over Kallio.

Discussion of Claim 10

Regarding Claim 10, Kallio fails to disclose or suggest

...method in a hybrid wireless communications device, the method comprising:

comparing a mobility measurement of the wireless communications device to a mobility threshold while connected to a broadband wireless network;

monitoring a cellular communications network if the mobility measurement is greater than a mobility threshold;

not monitoring the cellular communications network if the mobility measurement is not greater than the mobility threshold.

The Examiner's assertion that the transmission level or link quality discussed in Kallio corresponds to the claimed "...mobility measurement of the wireless communications device..." is also misplaced. Kallio neither discusses device mobility nor relates mobility to transmission level or link quality. The passages of Kallio referenced by the Examiner also fail to support the asserted rejection. At paragraph [0012], Kallio discusses an active mobile station on a GSM that is forced to handover to a target WLAN based on a handover request from the BSS to a MSC. At paragraph [0013], Kallio discusses a BSS handover algorithm that requests handover based on transmission levels (rx-level) relative to a threshold. At paragraph [0036], Kallio discusses making a location update when handing over from GSM to WLAN. At paragraph [0037], Kallio discusses roaming from GAM to WLAN when the transmission level threshold comparison indicates that WLAN should be selected. Claim 10 is thus patentably distinguished over Kallio.

Discussion of Claim 22

Regarding Claim 22, Kallio fails to disclose a

... method in a wireless communications device, the method comprising:

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> obtaining a measure of mobility of the wireless communications
> while selected to a cellular wireless communication system;
> monitoring for a broadband wireless communication system
> while selected to the cellular wireless communications system only if
> the measure of mobility exceeds a mobility threshold.

The various passages of Kallio referenced by the Examiner do not support the asserted rejection. At paragraph [0040], Kallio discloses a mobile station that attempts a GSM location update when WLAN transmission level indicates that a GSM cell should be selected. At paragraph [0041], Kallio discloses a mobile station that obtains GSM neighbor measurements upon receiving neighbor cell information from the wireless mobile center (WCM). At paragraph [0048], Kallio discusses resuming GSM neighbor cell measurements when the WLAN transmission level (rx-level) drops between upper and lower thresholds. Contrary to the Examiner's assertion, Kallio does not disclose "...obtaining a measure of mobility..." of a wireless communication device, or disclose "...monitoring for a broadband wireless communication system while selected to the cellular wireless communications system only if the measure of mobility exceeds a mobility threshold". Claim 22 is thus patentably distinguished over Kallio.

Arguments re: Kallio & Stoter

Rejection Summary

Claims 2, 9, 11, 15 and 20-21 stand rejected under 35 USC 103(a) as being unpatentable over Kallio in view of Stoter.

Discussion of Claim 11

Regarding Claim 11, Kallio and Stoter fail to disclose or suggest in combination with Claim 10 "… determining the mobility measurement from regression error information of a signal measurement on the broadband wireless network." The Examiner cites Stoter to remedy Kallio's admitted failure to disclose obtaining a mobility measurement based on regression error. Stoter however discloses using bit error rate (BER) and frame error rate (FER) as a measure of link quality. Kallio discloses a mobile station that attempts a GSM location update when a WLAN transmission level indicates that a GSM cell should be selected. Claim 11 is thus further patentably distinguished over the Kallio and Stoter.

Discussion of Claim 20

Regarding Claim 20, Kallio and Stoter fail to disclose or suggest a

> … method in a wireless communications device operable on first and second wireless communication systems, the method comprising:
> operating on the first wireless communications system;
> making signal measurements on the second wireless communications system;
> selecting the second wireless communications system if signal measurements on the second wireless communications system exceeds a dynamic threshold for a specified time period,
> the dynamic threshold compensates for changes in regression error of the signal measurements on the second wireless communications system.

In paragraph [0013], Kallio discusses a BSS handover algorithm that requests handover based on transmission levels (rx-level) relative to a threshold. Contrary to the Examiner's assertion, Kallio does not disclose or suggest "… selecting a second wireless communications system if signal

measurements on the second wireless communications system exceeds a dynamic threshold for a specified time period...."

The Examiner cites col. 4, lines 7-21 of Stoter to meet the admitted deficiency of Kallio to disclose a "... dynamic threshold [that] compensates for changes in regression error of the signal measurements on the second wireless communications system". At col. 4, lines 7-21, however, the disclosure of Stoter is limited to discussing the use of bit error rate (BER) and frame error rate (FER) as a measure of link quality. Stoter also fails to disclose or suggest a "...dynamic threshold [that] compensates for changes in regression error of the signal measurements on the second wireless communications system." Claim 20 is thus patentably distinguished over Kallio and Stoter.

Arguments re: Kallio & Chheda

Rejection Summary

Claims 16 and 18-19 stand rejected under 35 USC 103(a) as being unpatentable over Kallio in view of Chheda.

Discussion of Claim 16

Regarding Claim 16, Kallio and Chheda fail to disclose or suggest a

> ... method in a wireless communications device capable of communicating in a cellular communications network and in a broadband wireless network, the method comprising:
> determining regression line error information based on broadband wireless network signal measurements;

monitoring a cellular communications network if the error information is greater than a threshold;

not monitoring the cellular communications network if the error information is not greater than the threshold.

The Examiner admits that Kallio fails to disclose determining "...regression line error information based on broadband wireless network signal measurements..." but asserts that Chheda meets this deficiency based on the disclosure of paragraph [0024]. In paragraph [0024], however, Chheda discusses orthogonal code reuse and particularly collision detection based on frame error rate (FER) exceeding a threshold, for triggering hard handoff. Thus, contrary to the Examiner's assertion, there is no disclosure or discussion of using regression line error as a basis for monitoring a network. The term "regression" does not even appear in the publication. Claim 16 is thus patentably distinguished over Kallio and Chheda.

Discussion of Claim 18

Regarding Claim 18, Kallio and Chheda fail to disclose in combination with Claim 16, "... selecting the cellular communications network if a signal measurement on the broadband wireless network is less than a lower threshold." Claim 18 is distinguished over Kallio and Chheda for at least the same reasons as Claim 16.

Discussion of Claim 19

Regarding Claim 19, Kallio and Chheda fail to disclose or suggest in combination with Claim 18,

... selecting the broadband wireless network if signal measurements on the broadband wireless network is greater than or equal to an upper threshold for a specified time period,

remaining on the cellular communications network if the signal measurement on the broadband wireless network is not greater than or equal to the upper threshold for the specified time period.

The passages of Kallio referenced by the Examiner do not support the asserted rejection. At paragraph [0012], Kallio discusses an active mobile station on a GSM that is forced to handover to a target WLAN based on a handover request from the BSS to a MSC. At paragraph [0013], Kallio discusses a BSS handover algorithm that request handover based on transmission levels (rx-level) relative to a threshold. At paragraph [0036], Kallio discusses making a location update when handing over from GSM to WLAN. At paragraph [0037], Kallio discusses roaming from GAM to WLAN when the transmission level threshold comparison indicates that WLAN should be selected. Kallio does not disclose "... comparing a mobility measurement of the wireless communications device to a mobility threshold ..." or "... monitoring a cellular communications network if the mobility measurement is greater than a mobility threshold..." or "... not monitoring the cellular communications network if the mobility measurement is not greater than the mobility threshold." Claim 19 is thus patentably distinguished over Kallio.

Prayer For Relief

In view of the discussion above, the Claims of the present application are in condition for allowance. Kindly reverse the Examiner's

rejection and remand this application with instructions to allow issuance of a United States Patent without further delay.

Respectfully submitted,

/ ROLAND K. BOWLER II /

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Claims Appendix

1. (Previously Presented) A method in a wireless communications device, the method comprising:

obtaining a measure of mobility of the wireless communications device;

monitoring a first system while selected to a second system only if the measure of mobility exceeds a mobility threshold.

2. (Original) The method of Claim 1, obtaining the measure of mobility based on a regression error of a signal measurement on the second system.

3. (Original) The method of Claim 1, monitoring the first system includes obtaining a signal measurement from the first system and synchronizing with the first system.

4. (Original) The method of Claim 1, selecting the first system if a signal measurement of the second system drops below a second system lower threshold.

5. (Original) The method of Claim 1,

selecting the first system and deselecting the second system if the signal measurement of the second system drops below a second system lower threshold,

re-selecting the second system if the signal measurement of the second system exceeds a second system upper threshold for a predetermined time period after selecting the first system.

6. (Original) The method of Claim 5,

monitoring the first system after reselecting the second system,

discontinuing monitoring the first system if the measure of mobility is not greater than the mobility threshold.

7. (Original) The method of Claim 1,

obtaining the measure of mobility based on cell selection information obtained while selected to the second system,

monitoring the first system while selected to the second system only if the measure of mobility exceeds the mobility threshold.

8. (Original) The method of Claim 1,

the second system is a cellular system,

obtaining the measure of mobility based on number of different cells selected while selected to the second system.

9. (Original) The method of Claim 2, obtaining the signal measurement based on any one of a received signal strength indication, bit error rate information, and block erasure rate information.

10. (Original) A method in a hybrid wireless communications device, the method comprising:

comparing a mobility measurement of the wireless communications device to a mobility threshold while connected to a broadband wireless network;

monitoring a cellular communications network if the mobility measurement is greater than a mobility threshold;

not monitoring the cellular communications network if the mobility measurement is not greater than the mobility threshold.

11. (Original) The method of Claim 10, determining the mobility measurement from regression error information of a signal measurement on the broadband wireless network.

12. (Original) The method of Claim 11, determining the mobility measurement based on a root mean square of the regression error information.

13. (Original) The method of Claim 10, selecting the cellular communications network if a signal measurement on the broadband wireless network is less than a lower threshold.

14. (Original) The method of Claim 13,

selecting the broadband wireless network if the signal measurement on the broadband wireless network is greater than or equal to an upper threshold for a specified time period,

remaining on the cellular communications network if the signal measurement on the broadband wireless network is not greater than or equal to the upper threshold for the specified time period.

15. (Original) The method of Claim 11, obtaining the signal measurement based on any one of received signal strength indication information, bit error rate information, and block erasure rate information.

16. (Original) A method in a wireless communications device capable of communicating in a cellular communications network and in a broadband wireless network, the method comprising:

determining regression line error information based on broadband wireless network signal measurements;

monitoring a cellular communications network if the error information is greater than a threshold;

not monitoring the cellular communications network if the error information is not greater than the threshold.

17. (Original) The method of Claim 16, determining regression line error information includes determining a root mean square of regression error associated with a regression line.

18. (Original) The method of Claim 16, selecting the cellular communications network if a signal measurement on the broadband wireless network is less than a lower threshold.

19. (Original) The method of Claim 18,

selecting the broadband wireless network if signal measurements on the broadband wireless network is greater than or equal to an upper threshold for a specified time period,

remaining on the cellular communications network if the signal measurement on the broadband wireless network is not greater than or equal to the upper threshold for the specified time period.

20. (Original) A method in a wireless communications device operable on first and second wireless communication systems, the method comprising:

operating on the first wireless communications system;

making signal measurements on the second wireless communications system;

selecting the second wireless communications system if signal measurements on the second wireless communications system exceeds a dynamic threshold for a specified time period,

the dynamic threshold compensates for changes in regression error of the signal measurements on the second wireless communications system.

21. (Original) The method of Claim 20, making signal measurements based upon any one of received signal strength indication information, bit error rate information, and block erasure rate information.

22. (Original) A method in a wireless communications device, the method comprising:

obtaining a measure of mobility of the wireless communications while selected to a cellular wireless communication system;

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monitoring for a broadband wireless communication system while selected to the cellular wireless communications system only if the measure of mobility exceeds a mobility threshold.

23. (Previously Presented) The method of Claim 22, obtaining the measure of mobility based on changes in a universe of different cells selected while selected to the cellular wireless communication system.

<u>Evidence Appendix</u>

(None)

Related Proceedings Appendix

(None)